

Chemical Analysis Report

SW-DIST-2016-04-05-02

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **WBID: 1633A, 1668B, 1668C**

Request ID: **RQ-2016-04-04-74**

Customer: **SW-DIST**

Project ID: **SMP**

Send Reports to:

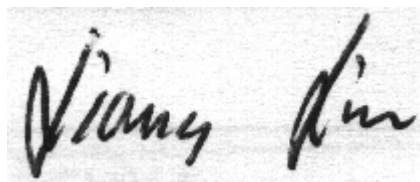
FL Dept. of Environmental Protection
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13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
Attn: Stephen Clingerman

For additional information please contact

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 28-APR-2016 15:24

A handwritten signature in black ink, appearing to read "Liang Lin", on a light-colored background.

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical group are included in this report: Nutrients.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: G5SW0119

Collection Date/Time: 04/04/2016 09:40

Field ID: G5SW0119

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1786475	EPA 180.1 Rev. 2.0	Turbidity	17	A	NTU	P301670	
	EPA 300.0 Rev. 2.1	Chloride	77		mg Cl/L	P301853	
		Sulfate	13		mg SO4/L	P301856	
	SM 2120 B	Color (true)	70		PCU	P301643	
	SM 2320 B-97	Total Alkalinity	56		mg CaCO3/L	P301934	
	SM 2540 C-97	TDS	207		mg/L	P302204	
	SM 2540 D-97	TSS	30		mg/L	P302209	
	SM 4500 F-C-97	Fluoride	0.17		mg F/L	P301937	
1786478	EPA 350.1 Rev. 2.0	Ammonia-N	0.012		mg N/L	P302134	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	3.3		mg N/L	P302242	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P301917	
	EPA 365.1 Rev. 2.0	Total-P	0.26		mg P/L	P302047	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P301928	
1786481	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.017		mg P/L	P301605	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Matrix spike recovery data for one of two spiked samples is unavailable due to high analyte concentration in the QC sample.

SM 2120 B: The precision data is unavailable due to the low analyte concentration in the QC sample.

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: G5SW0118

Collection Date/Time: 04/04/2016 10:20

Field ID: G5SW0118

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1786476	EPA 180.1 Rev. 2.0	Turbidity	4.0		NTU	P301670	
	EPA 300.0 Rev. 2.1	Chloride	87		mg Cl/L	P301853	
		Sulfate	33		mg SO4/L	P301856	
	SM 2120 B	Color (true)	95		PCU	P301640	
	SM 2320 B-97	Total Alkalinity	159		mg CaCO3/L	P301934	
	SM 2540 C-97	TDS	365		mg/L	P302204	
	SM 2540 D-97	TSS	4	I	mg/L	P302209	
	SM 4500 F-C-97	Fluoride	0.19		mg F/L	P301937	
1786479	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P302134	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.53		mg N/L	P302242	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.016		mg N/L	P301917	
	EPA 365.1 Rev. 2.0	Total-P	0.026		mg P/L	P302050	
	SM 5310 B-00	Organic Carbon	9.5		mg C/L	P301928	
1786482	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P301606	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Matrix spike recovery data for one of two spiked samples is unavailable due to high analyte concentration in the QC sample.

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: G5SW0047

Collection Date/Time: 04/04/2016 11:35

Field ID: G5SW0047

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1786477	EPA 180.1 Rev. 2.0	Turbidity	1.0		NTU	P301670	
	EPA 300.0 Rev. 2.1	Chloride	66		mg Cl/L	P301853	
		Sulfate	18		mg SO4/L	P301856	
	SM 2120 B	Color (true)	31		PCU	P301640	
	SM 2320 B-97	Total Alkalinity	87	A	mg CaCO3/L	P301934	
	SM 2540 C-97	TDS	258		mg/L	P302204	
	SM 2540 D-97	TSS	3	I	mg/L	P302209	
	SM 4500 F-C-97	Fluoride	0.16		mg F/L	P301937	
1786480	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P302135	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.74		mg N/L	P302242	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P301917	
	EPA 365.1 Rev. 2.0	Total-P	0.023		mg P/L	P302050	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P301928	
1786483	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P301606	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Matrix spike recovery data for one of two spiked samples is unavailable due to high analyte concentration in the QC sample.

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P301670

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P301853

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P301856

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P302134

Component	Result	Code	Units
Ammonia-N	0.002	U	mg N/L

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P302135

Component	Result	Code	Units
Ammonia-N	0.002	U	mg N/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P302242

Component	Result	Code	Units
Kjeldahl Nitrogen	0.080	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P301917

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P302047

Component	Result	Code	Units
Total-P	0.002	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P302050

Component	Result	Code	Units
Total-P	0.002	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P301605

Component	Result	Code	Units
O-Phosphate-P	0.004	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P301606

Component	Result	Code	Units
O-Phosphate-P	0.004	U	mg P/L

Reference Method: SM 2120 B
Batch ID: P301640

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P301643

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P301934

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 C-97
Batch ID: P302204

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P302209

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P301937

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P301928

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301853

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301856

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P302134

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P302135

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	102		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P302242

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P302242

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	93.5		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P301917

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	96.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P302047

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	97.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P302050

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	99.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P301605

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	104		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P301606

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	100		P	90 - 110

Reference Method: SM 2320 B-97
Batch ID: P301934

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	95 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P301937

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.3		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P301928

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	93.7		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301853

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786718	Chloride	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301856

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786432	Sulfate	99.5		P	90 - 110
1786718	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P302134

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786469	Ammonia-N	98.2	99.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P302135

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786507	Ammonia-N	104	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P302242

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786470	Kjeldahl Nitrogen	93.1	87.9	P/F	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P301917

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786529	NO2NO3-N	94.0	92.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P302047

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786403	Total-P	95.0	97.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P302050

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786479	Total-P	101	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P301605

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786378	O-Phosphate-P	98.3	99.1	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P301606

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786482	O-Phosphate-P	99.0	99.4	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P301937

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786477	Fluoride	98.5	98.5	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P301928

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786384	Organic Carbon	94.0	93.7	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P301670

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786475	Turbidity	1.20	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301853

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786718	Chloride	0.0325	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301856

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786718	Sulfate	11.4	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P302134

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786469	Ammonia-N	1.37	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P302135

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786507	Ammonia-N	2.83	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P302242

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786470	Kjeldahl Nitrogen	3.26	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P301917

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786529	NO2NO3-N	1.39	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P302047

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786403	Total-P	2.30	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P302050

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786479	Total-P	0.583	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P301605

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786378	O-Phosphate-P	0.519	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P301606

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786482	O-Phosphate-P	0.380	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P301640

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786464	Color (true)	1.32	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P301934

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786477	Total Alkalinity	0.122	Sample	P	0 - 4.8

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
Batch ID: P302204

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786432	TDS	3.64	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P301937

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786477	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P301928

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786384	Organic Carbon	0.142	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A68637
Included Lab Sample IDs: 1786475, 1786476, 1786477

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	103	103	P/P	90 - 110
Sulfate	102	99.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A68657
Included Lab Sample IDs: 1786481, 1786482, 1786483

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	101	100	P/P	90 - 110
O-Phosphate-P	98.2	99.8	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A68676
Included Lab Sample IDs: 1786475, 1786476, 1786477

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	101	P/P	85 - 115
Color (true)	102	103	P/P	85 - 115

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A68679

Included Lab Sample IDs: 1786475, 1786476, 1786477

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	99.5	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A68762

Included Lab Sample IDs: 1786478, 1786479, 1786480

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	94.0	95.0	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A68767

Included Lab Sample IDs: 1786478, 1786479, 1786480

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.8	96.4	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A68768

Included Lab Sample IDs: 1786475, 1786476, 1786477

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	103	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A68768

Included Lab Sample IDs: 1786475, 1786476, 1786477

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A68837

Included Lab Sample IDs: 1786478

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A68841

Included Lab Sample IDs: 1786478, 1786479, 1786480

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	102	103	P/P	90 - 110
Ammonia-N	103	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A68849

Included Lab Sample IDs: 1786479, 1786480

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.2	98.2	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A68849
Included Lab Sample IDs: 1786479, 1786480

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.0	98.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A68934
Included Lab Sample IDs: 1786478, 1786479, 1786480

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	106	96.4	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.
Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity				1.20	
EPA 300.0 Rev. 2.1	Chloride	102	103		0.0325	
	Sulfate	100	101 99.5		11.4	
EPA 350.1 Rev. 2.0	Ammonia-N	101	98.2 99.8			1.37
	Ammonia-N	102	104 100			2.83
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	93.5	93.1 87.9			3.26
EPA 353.2 Rev. 2.0	NO2NO3-N	96.0	94.0 92.5			1.39
EPA 365.1 Rev. 2.0	Total-P	97.8	95.0 97.3			2.30
	Total-P	99.8	101 100			0.583
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	104	98.3 99.1			0.519
	O-Phosphate-P	100	99.0 99.4			0.380
SM 2120 B	Color (true)				1.32	
SM 2320 B-97	Total Alkalinity	102			0.122	
SM 2540 C-97	TDS				3.64	
SM 4500 F-C-97	Fluoride	98.3	98.5 98.5			0.0
SM 5310 B-00	Organic Carbon	93.7	94.0 93.7			0.142

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1786475, 1786476, 1786477
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1786475, 1786476, 1786477
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1786475, 1786476, 1786477
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1786478, 1786479, 1786480
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1786478, 1786479, 1786480
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1786478, 1786479, 1786480

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1786478, 1786479, 1786480
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1786481, 1786482, 1786483
SM 2120 B / E31780	True Color measured at 450 nm	1786475, 1786476, 1786477
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1786475, 1786476, 1786477
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1786475, 1786476, 1786477
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1786475, 1786476, 1786477
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1786475, 1786476, 1786477
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1786478, 1786479, 1786480

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	04/05/2016			04/05/2016 18:39	Sima Feizi	1786475, 1786476, 1786477
EPA 300.0 Rev. 2.1	04/05/2016			04/08/2016	Julia Storbeck	1786475, 1786476, 1786477
EPA 350.1 Rev. 2.0	04/05/2016			04/12/2016	Diana M. Turner	1786478, 1786479, 1786480
EPA 351.2 Rev. 2.0	04/05/2016	04/14/2016	Sofia Elnemr	04/18/2016	Virginia P. Brown	1786478, 1786479, 1786480
EPA 353.2 Rev. 2.0	04/05/2016			04/08/2016	Diana M. Turner	1786478, 1786479, 1786480
EPA 365.1 Rev. 2.0	04/05/2016	04/12/2016	Christopher Armour	04/12/2016	Lipi Saha	1786478
	04/05/2016	04/12/2016	Christopher Armour	04/13/2016	Lipi Saha	1786479, 1786480
EPA 365.1 Rev. 2.0 dissolved	04/05/2016			04/05/2016 14:54	Ping Hua	1786482
	04/05/2016			04/05/2016 15:33	Ping Hua	1786481
	04/05/2016			04/05/2016 15:34	Ping Hua	1786483
SM 2120 B	04/05/2016			04/05/2016 17:52	Blanca Fach	1786476
	04/05/2016			04/05/2016 17:53	Blanca Fach	1786477
	04/05/2016			04/05/2016 18:30	Blanca Fach	1786475
SM 2320 B-97	04/05/2016			04/08/2016	Dale L. Simmons	1786475, 1786476, 1786477
SM 2540 C-97	04/05/2016			04/07/2016	Yijie Li	1786475, 1786476, 1786477
SM 2540 D-97	04/05/2016			04/07/2016	Yijie Li	1786475, 1786476, 1786477
SM 4500 F-C-97	04/05/2016			04/08/2016	Dale L. Simmons	1786475, 1786476, 1786477
SM 5310 B-00	04/05/2016			04/08/2016	Sofia Elnemr	1786478, 1786479, 1786480